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The Effects of Social Determinants on Renal Care Among ESKD Patients in the Philippines: Rural vs. Urban Areas

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The Effects of Social Determinants on Renal Care Among ESKD Patients in the

Philippines: Rural vs. Urban Areas

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NURS 4500: Nursing Research and Senior Thesis

Dr. Patricia Harris

May 7, 2021

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Abstract

From a Public Health Nursing (PHN) perspective, populations who are diagnosed with chronic disease or illness are the most vulnerable to end-stage kidney disease (ESKD) or end-stage renal disease (ESRD). The International Society of Nephrology (ISN) states that the mortality rate for ESKD amounts to roughly 7 million individuals worldwide. In examining causes of ESKD throughout both history and the lifespan, high mortality rates are attributed to the lack of access to life-sustaining therapies such as dialysis or transplantation. The lack of access to therapy or healthcare services has been an immense Public Health crisis in the last few decades.

Accessibility to various resources such as healthcare, transportation, food, and other basic needs, are defined as *social determinants*. Typically, a lack of accessibility equates to poor health, and an abundance of accessibility equates to optimal health. In rural countries such as the Philippines, accessibility is questionable, and populations suffer from a lack of research addressing the relationship between social determinants and quality of health.

A comprehensive literature review was performed, and a gap was observed in the current research literature that focuses on Philippine populations and renal therapies. Dialysis or other life-sustaining treatments are less available for individuals in low-research settings. The root of the issue is systemic, indicating that intervention must be done at the governmental or authoritative forefront. A research study is proposed to address this gap.

Acknowledgement

Firstly, I would like to abundantly thank my Senior Thesis Research Professor, Dr. Patricia Harris for her guidance, direction, and assistance throughout my Thesis process. I attribute my success and the completion of this paper primarily to her. I would like to dedicate this Thesis to my late Grandfather, Wilfredo (Willie) Huertas Sr., who passed away due to multiple organ dysfunction syndrome (MODS) secondary to end-stage kidney disease (ESKD). I would like to extend my gratitude to both my cousins in the Huertas Family and my parents - who inspired the topic of this Thesis. Lastly, I extend my appreciation to my close friends Vince, Kristian, Joy, Ruth, Justin, Kash, and Ravern - for being my support system throughout the development of this Thesis.

Introduction

End-stage kidney disease (ESKD), also commonly known as end-stage renal disease (ESRD) is a renowned medical diagnosis resulting from a variety of causes across the lifespan. With ESKD often accompanying other health problems such as diabetes mellitus or hypertension, the adult population proves to be the most vulnerable. As individuals continue to age, the risk for obtaining ESKD rises. Renal care for ESKD exists by means of either a form of dialysis treatment – such as hemodialysis or peritoneal dialysis, or kidney transplant. With the current public health infrastructures in place, it is important to address the need for healthcare reform in various areas of the world as nurses. When examining the healthcare system in rural countries, it goes without saying that these areas have low population density accompanied with vast amounts of undeveloped land. In comparison to urban countries, there tends to be densely population areas accompanied with developed land and established resources.

Rural areas throughout the world are often populated with individuals who struggle obtaining a means of basic needs. This includes the difficulty in receiving transportation, education, and a stable means of livelihood. In underdeveloped countries such as the Philippines, the difficulty in receiving access to various resources is stressed. This is the very basis of this literature review, theoretical framework, and proposal. The idea that an individual's access to healthcare is dependent on their environmental conditions is public health issue that continues to exist today. In order to better understand the social determinants in rural vs. urban settings, this thesis will consist of a review of the current research literature, and a proposal for future study to both address and answer the question of what the differences are in the effects of social determinants on rural vs. urban environments in the Philippines.

Problem Statement

According to the International Society of Nephrology (ISN), up to 7 million individuals are expected to die of end-stage kidney disease (ESKD) each year worldwide (Luyckx, et Al., 2020, e10). From a global perspective, the precursors and various causes of ESKD mortality rates are attributed to the lack of access to life-sustaining treatment. In low-income and low-resource settings, a variety of healthcare disparities stemming from systemic challenges exist. The lack of access to renal diagnosis, lack of public health infrastructure, limited education of kidney disease, lack of awareness for kidney morbidity, and financial disparity are all factors that attribute to the systemic challenges that foster an inequitable access to renal care.

According to the ISN public affairs, it is in under-developed areas throughout the world wherein limitations to renal care access are present (Luyckx, et Al., 2020, e12). In rural countries such as South Africa, limitations in receiving care fall on the basis of the country's government. In a study conducted by the INS public affairs titled, *Dialysis funding, eligibility, procurement, and protocols in low- and middle-income settings*, limitations on dialysis access include modality (peritoneal dialysis only or hemodialysis only), transplant-eligible patients only, age, and comorbidities or cause of renal disease (Luyckx, et Al., 2020, e12).

While the healthcare system in rural countries continue to undergo current reform and significant progress has been made in recent years, there is a lack of research described in the literature that is dedicated to specific under-developed countries. In Southeast Asia, the Philippines is a country that inherits a wide range of rural land with low population density. It is in areas such as these where clinically suitable patients for renal care exist but are unable to receive it. Nursing care requires a holistic approach, which includes expanding one's knowledge regarding systematic challenges in the healthcare system of various third world developing

countries. By understanding the effects of the social determinants of rural area living compared to the social determinants of urban area living, nurses can assist in improving the public health infrastructure for patients with ESKD in the Philippines.

Research Questions

The research questions presented in this paper serve as the underlying foundation for which this topic begins. It is important to note that the research questions specified below bifurcate into two perspectives. The first question entails the broad perspective, while the latter question introduces the aim of the research being studied:

1. For geriatric patients in the Philippines with chronic kidney disease, do the social determinants of rural area living compared to the social determinants of urban area living affect access to renal care?
2. How can nurses improve the public health infrastructure for ESKD in the rural areas of the Philippines?

Literature Review: Introduction

This literature review primarily focuses on the public health issue regarding the lacking accessibility of renal care access for patients with end-stage kidney disease specifically in the Philippines. The research literature pulled to conduct this review was retrieved through various research platforms and databases through the Dominican University of California library (i.e., Iceberg, CINAHL, and PubMed). A set of keywords utilized in the search for relevant research articles include end-stage kidney disease (ESKD), renal care access, renal care access in rural areas, renal care access in urban areas, healthcare access, public health, and the Philippines.

All six articles referenced in this literature review discuss the various social determinants among Filipinos and the effects of those determinants specifically on Filipino residents throughout the Philippines. The basis of choosing the research articles in this review was by identifying each article as a primary or secondary source. With the primary sources defined as an original study conducted by original researchers, and the secondary sources defined as a study that incorporates or mentions a primary source that is deemed relevant to their study. The six articles examined throughout this review deviate into three categories. The first category analyzes the surveys of the authoritative figures' perspective on the lack of access to health services and renal care in low-income areas. Secondly, articles in this category hone in on the relationship of disability and healthcare disparities among Filipinos. The third category focuses on social determinants affecting access to various health services and dialysis care in low-resource settings. It is important to note that this literature review captures the essence of public health issues in the field of healthcare and nephrology nursing.

Authoritative Figures' Perspective on the Lack of Renal Care in Low-Income Areas

The current public health infrastructure in low-resource settings regarding renal care and end-stage kidney disease (ESKD) is examined first from the perspective of current nephrologists, government officials, and public health professionals. In an article titled, *Dialysis funding, eligibility, procurement, and protocols in low- and middle-income settings: results from the International Society of Nephrology collection survey*, authors Valerie A. Luycks, Brendan Smyth, David C. H. Harris, and Roberto Pecoits-Filho (2020), proposed a study that aimed to examine the experiences of nephrologists when it comes to five primary dialysis provisions. The five domains include: “(i) *Dialysis funding and eligibility*; (ii) *dialysis-procurement mechanisms*; (iii) *clinical protocols for dialysis*; (iv) *monitoring of dialysis outcomes*; and (v) *barriers to care for ESKD*” (Luycks, V. A., et Al., 2020).

In this study, one hundred and forty-one responses were received between the time frame of September 2017 to February 2018. Descriptive analysis is used to distinguish the countries participating in the study: 21 of the responses come from high-income countries (HIC), while 120 responses came from LMIC (lower-middle-income countries). Furthermore, the study identifies a majority of the responses to come from Indonesia (45%) and South Africa (10%) (Luycks, V. A., et Al., 2020). The study utilizes a mixed method approach wherein qualitative and quantitative methods are used to collect data. The quantitative method used refers to a descriptive analysis of the countries' characteristics among each of the five domains. The qualitative results refer to the identification of representative quotes across the five domains (Luycks, V. A., et Al., 2020). The participation in this study was voluntary and the characteristics of the survey for the nephrologists did not warrant the need for an ethics approval.

Data collected from the survey across the five domains concluded various barriers to the access and availability of ESKD care for patients in low-resource areas. A significant barrier for ESKD care for patients is the overall cost of the care or cost of the healthcare system. Public funding structures for renal therapy (hemodialysis, peritoneal dialysis, and kidney transplantation) were found to be less prominent in lower- middle- income countries (LMIC) (Luyckx, V. A., et Al., 2020). Other examples of barriers drawn from the survey include the lack of public health infrastructure, healthcare staffing, and lack of training and education on various renal care provisions. This causes a domino effect because the quality of renal care on the part of the patient is affected as a result of short staffing, immense costs, and infrastructure constraints. In low-resource areas, high-quality renal care (specifically dialysis) is jeopardized due to the unaffordability or lack of expertise in renal care administration. The article had several limitations – including low-response rate in low-resource settings and the participant’s voluntary nature. As a result, the ISN’s plan of action involves developing a set of guidelines that document improved public health infrastructures for dialysis and ESKD care among patients living in low-resource areas.

In another article written by authors Harvy Joy Liwanag and Kaspar Wyss, the relationship between the government and access to healthcare services serve as the basis of the study. In 1992, the Philippines decentralized government health services which meant that the decisions for access and presence of health service varied based on the local level. The devolution of health services to local governments created a set of mixed opinions across the country. The objective of the article entitled, *Who should decide for local health services? A mixed methods study of preferences for decision-making in the decentralized Philippine health*

system” focuses on the analysis of decision makers’ perspectives on who should be making decisions for local health services (Liwanag, H. J., et Al., 2020).

This study used a mixed method approach using both qualitative and quantitative methods. The qualitative research method used involved an in-depth interview that aims to examine how decision-makers or government workers make decisions for various health services functions such as: *Planning, Health financing, Resource management, Human resources for health, Health service delivery, and Data management and monitoring*. The quantitative approach used in this study was by means of an online survey which aimed to examine the decision-makers’ knowledge about the concept of devolution, their opinion on the benefits of health services, and the challenges they face in the implementation of health service delegation from a local perspective. The in-depth interviews were conducted with 27 decision-makers in 2017 who were “purposively-selected to represent different levels of decision-making, institutional affiliations, and geographical settings in the Philippine health system” (Liwanag, H. J., et Al., 2020). As for the online survey questionnaire, 529 valid emails were able to receive the questionnaire and were available for follow-up. From the original 682 email addresses on the list, 153 of the emails either bounced back or failed to deliver, thus equating to 529 emails for follow-up. As a result, 24 responses were received for the quantitative approach and 27 interviewees for the qualitative approach.

The study drew the conclusion that the transfer of health service decision-making to the local level does not ensure the fact that decisions are being made in an effective manner for the sake of the local communities. The study suggests a policy option that reads, “Rather than re-centralize, a policy option for the Philippines includes emphasizing the role of the central government in exercising its regulatory oversight over local governments to minimize political

interference in decision-making and to protect the welfare of local government technical staff” (Liwanag, H. J., et Al., 2020). This study emphasized the idea that the concept of decentralization itself presents no detrimental effects on the access to health services, but it’s vital to pay attention to how the devolution process is carried out on the local level in order to ensure that the decisions being made for the various health service functions are equitable.

The articles presented in this category of this literature review set to examine the perspectives of the access to healthcare or health services in low-resource areas or countries. From the spectrum of nephrologists to decision-makers in the Philippine government, the articles confirmed that areas in the world with little to no resources are the most vulnerable to renal care inequities and overall inaccessible or unaffordable healthcare. The articles presented here support the hypothesis that the social determinants present in rural areas (lack of financial support, education, and public health infrastructure) have a substantial effect on the ability to receive healthcare for patients living in such communities.

The Relationship of Disability and Healthcare Disparities Among Filipinos

In understanding the prevalence of end-stage kidney disease across the Filipino population, this category examines the relationship between disability and healthcare disparities among Filipinos. The article entitled, *Cross-sectional Survey to Assess Prevalence of Disability and Access to Services in Albay Province, The Philippines* presents the significance of how prominent disability is among Philippine populations and simultaneously assesses the healthcare system specifically in Albay Province. Information and data gathered on Albay Province was provided by the Philippine national census between the years of 1990 to 2010. The article writes, “In 2010, the population of Albay Province was 1,233,695 (Philippine Statistics Authority – PSA, 2010) with about one third living in three cities. The prevalence of disabilities in the

province in the household population ≥ 5 years old was reported to be 1.7% (PSA, 2015), somewhat higher than the national prevalence of 1.57% (PSA, 2013)” (Hodge, et. Al., 2017). This presents the claim that densely populated areas are more vulnerable to a wide range of disability compared to the national percentage.

The cross-sectional design in this study uses a cross-sectional survey among 70 barangays (small villages). The study uses a systematic and randomized approach in selecting the sample size which eliminates some forms of bias in the study. In a cross-sectional study, different populations in the study are examined simultaneously at a specific point in time to analyze various behaviors or trends. The researchers implemented the gathering of data through three questionnaires: The Household Questionnaire and two additional questionnaires on, “...levels of functional activity limitation, demography, socio-economic conditions, education, employment and access to services” (Hodge, M., et. Al., 2017). Ethical concerns are addressed when they mentioned that informed consent for data collected was obtained for both the surveyors and the participants of the survey. Confidentiality was maintained in the study as all participants identified with disabilities were given anonymous identification numbers.

The results of this study are pulled from 2,100 households in the 70 barangays that were surveyed – indicating that the total household population for the study was 11,104 individuals (Hodge, M., et. Al., 2017). Several conclusions can be drawn from the various figures provided in the study. The figure describing the prevalence of disabilities among children and adults in various barangays in Albay Province revealed that the “Rural plain” area had the highest percentage compared to other barangay types (Figure 1). Figure 6 in the study reveal responses from the survey participants with disabilities and their various reasons as to why care from a support service is not received. This figure shows that a significant barrier in access to care is the

lack of education or competency in receiving or understanding various services. The authors of this study indicate that, "...disabilities in Albay Province are more prevalent in rural areas" (Hodge, M., et. Al., 2017). The results of the study identified various socio-economic determinants among Filipino populations that hinder their ability to access healthcare services. Through the survey results, the researchers identified the lack of access to both education and employment were factors attributing to deficient access to healthcare services. Improvement in public health infrastructure and public health policy for various Philippine populations is needed in order to identify, educate, and fully support all persons with disabilities (Hodge, M., et. Al., 2017).

Research literature presented in the article, *The Social, Cultural and Behavioral Determinants of Health among Hawaii Filipinos: The Filipino Healthy Communities Project* was produced with the objective of gathering, "Filipino community members' perspectives on why such chronic disease health disparities exist for Filipinos, and identifying solutions to address them" (Pobutsky, A., et. Al., 2015). The foundation of the study comes from the prevalence of chronic diseases among Filipino men and women in Hawaii. According to the 2011 Hawaii Heart Disease and Stroke Strategic Plan, "Filipino men have disproportionately high coronary heart disease mortality rates and both Filipino men and women have higher stroke mortality rates than other ethnic groups (Pobutsky, A., et. Al., 2015). The study shines light on the prevalence of chronic diseases and health disparities among Filipino men and women compared to other ethnic groups, why they exist prominently among this population, and interventions needed to raise attention and improve such health disparities.

Multiple qualitative methods were used in this study among 20 focus groups with roughly 130 participants in Oahu and 10 smaller focus groups on neighbor islands. 10 focus groups

containing participants who primarily speak either Tagalog or Ilocano (two language dialects in the Philippines) were given surveys, while 20 key interviews were conducted among Filipino health professionals and community leaders. Questions asked in the various focus groups were created to gather information on, "...what (1) constitutes health and healthy communities for Filipinos and (2) barriers to achieving health among Filipinos, including social determinants (non-medical/non-behavioral barriers)" (Pobutsky, A., et. Al., 2015). Results from the focus groups revealed that current hurdles that Filipinos face when it comes to achieving optimal health include socio-economic factors, work time constraints, language barriers, religious believes, cultural factors, ethnic stereotypes, discrimination, fear of seeing a primary health care provider, and belief in alternative medicinal methods for care. Results also revealed that Filipinos believe some of the major causes of diabetes, obesity, hypertension, and hyperlipidemia include diet, sedentary behavior, cultural/language issues, stress, lack of affordable care and lack of education.

In continuing the qualitative research, a question surveying possible recommendations to improve healthcare disparities and socio-economic health determinants was asked. Responses from the focus group participants believed that for there to be improved public health infrastructure for optimal health, access to education and affordable healthcare should be provided by the government. Participants in the study emphasize much of the socio-economic determinants to revolve around the culture of Filipinos. From an average Filipino's diet, to their physical lifestyle, their access to education, employment, financial support, and transportation depends precisely on the environment they grew up in. It is difficult to implement an intervention that attempts to create change on cultural history in an ethnic group. Limitations in this study included the fact that community leaders who participated in the study may have previously

received a better education foundation than others, and the methods used to create focus groups could have incorporated highly motivated or passionate participants – thus introducing a source of possible bias. This study did not specify various ethical considerations, particularly aspects regarding confidentiality, informed consent, anonymity.

The research literature presented in both of these articles accentuate the various socio-economic determinants and healthcare disparities among the general Filipino population. Through such literature, it can be seen that individuals who reside in the Philippines are more vulnerable to a lower quality of health based on a variety of socio-economic factors. In general, chronic diseases such as hypertension, diabetes, obesity, and hyperlipidemia increase the risk of many renal, cardiac, and pulmonary diseases. The literature in this category introduces the fact that a majority of the health disparities and disabilities Filipinos face are due to factors that are not within their ability to control. Access to education, language barriers, health illiteracy, access to a stable livelihood, opportunities for work, lack of transportation, and cultural behaviors are aspects of public health infrastructure that requires great intervention and presents an immense need for improvement in the Philippines. These articles add to the body of research in noting that both rural areas in the Philippines and the Filipino population are more susceptible to lack of access to care and are therefore connected to higher rates of chronic disease or disability.

Social Determinants Affecting Access to Dialysis Care in Low-Resource Settings

Understanding the effects of socio-economic factors on health access across various Philippine populations, the third category of this literature review focuses on social determinants affecting access to dialysis care in low-resource settings. In a scientific article focusing on geriatric Filipino patients entitled, *Examining determinants of health service utilisation among Filipino older people: A cross-sectional study*, authors from the Australasian Journal on Ageing

conduct a study to evaluate the current factors affecting how health services are used among older Filipinos. This study involved a total of 237 older individuals from *Marikina City, Philippines*. A cross-sectional study design was used for this study in an attempt to evaluate different populations during a specific point in time. In the perspective of this study, the different populations are exemplified by means of various barangay (small village) populations. Marikina City, Philippines is a highly urbanized city, located along the eastern border of Metro Manila (Cotingting, C. T., et. Al., 2019). Participants in the study come from four barangays in Marikina City who were randomly selected. The four barangays include: *Parang, Sto. Nino, Tanong, and Tumana*. 237 individuals were selected in the study (59 participants from each barangay) to be interviewed face-to-face between June and July of 2017.

Using a house-to-house survey as the basis of the interview, respondents who were lost to follow-up or not available were replaced randomly by another participant on the list of eligible older individuals. Eligibility for a participant included the following requirements: respondent aged 60 years or over at the time of the interview and had lived in Marikina City for at least 50% of the time in the past three years (Cotingting, C. T., et. Al., 2019). Because of this ageing research study, proxy interviews were used for individuals who were not available for their interview. These reasons include difficulty hearing or speaking, presence of dementia or cognitive decline, frailty, or Filipino and English illiteracy (Cotingting, C. T., et. Al., 2019). Informed consent (either signed or verbal) was obtained from all participants including proxy participants on behalf of the intended individual prior to the study. Ethical clearance for this study was obtained from the Ateneo School of Medicine and Public Health panel of the University Research Ethics Committee.

The survey instrument used in the study as the basis of the face-to-face interview contained five sections: identifying information, predisposing factors, enabling factors, need factors, and health utilisation in the past year (Cotingting, C. T., et. Al., 2019). The qualitative questions used in the interview presented as “yes/no” or “multiple choice” questions for each participant. The results of the study concluded that among older adults, gender and presence of chronic disease were the most influential factors associated with using various health services. Primarily, results revealed 65% female participants, 72% currently not employed, 53% were married or had live-in partners, 41% had a lack of education past the elementary-level, and 36% had a lack of education past the high school level. The study also highlighted roughly 65% of the participants’ monthly household incomes averaging less than 40,000 Php (Philippine Pesos) or about 750 USD (United States Dollars) with 79% having health insurance provided by the Philippine Health Insurance Corporation coverage (Cotingting, C. T., et. Al., 2019). Lastly, the study revealed that 82% of all participants were diagnosed with a chronic disease – a majority being hypertension and diabetes (61% and 24% respectively).

In analyzing the utilisation of health services within the past year, participants are spread out when it comes to visiting either a public facility (49%) or a private facility (47%) in order to receive healthcare services. Gender and chronic disease were found to be the most significant factors affecting health service utilisation in this study, because for those who presented a chronic disease or were female were 3.1 times and 2.2 times higher to seek various health services respectively – compared to those without chronic disease or were male. Compared to previous articles in this literature review, the authors state, “Age, civil status, educational level, employment status, health insurance coverage, household income and perceived health status were not associated with older people’s health service utilisation” (Cotingting, C. T., et. Al.,

2019). The study detected the most common financial resources used to pay for health services included relatives, pension, and personal income or savings.

One limitation in this study includes the fact that this study is conducted mainly in one city, therefore results of this study cannot be concluded for geriatric Filipino patients in the entire country of the Philippines. Another limitation in this study is the presence of bias stemming from proxy interviews – which was minimized by only including participants who had known the proxy for longer than three years. Recall bias is also present in the form of failure to recall health service utilisation (which was a self-reported measure) and was minimized by limiting the measurement to health services used only in the past year. The results of the article conclude the fact that in urban areas of the Philippines, socio-economic factors such as employment, transportation, financial source, and lack of education do not have any effect on the ability to receive access to healthcare or healthcare services. The findings from this study consistently identify chronic disease as a significant cultural determinant on the general health of various Philippine populations. The late diagnosis of chronic diseases such as diabetes and hypertension foster a declining health among older Filipinos, as these comorbidities place individuals more at risk for obtaining worsening diseases.

At this point of the literature review, the research aforementioned reveals a significant lack of access to various healthcare services in low-resource or resource-limited settings. With the knowledge obtained regarding determinants of health among Filipinos and the prevalence of chronic diseases, the article coming from the scientific journal: *Current Opinion in Nephrology and Hypertension* specifically assesses the use, access to, and the results of dialysis in low-resource settings. It is in such settings, where the secondary research provides insight on the prevalence of the barriers in receiving dialysis care. The authors of the study discuss a variety of

statistics highlighting the public health issue regarding lack of access to renal care in third world countries. In countries such as India, China, and Africa, there is a lack of dialysis care provided for patients diagnosed with end-stage kidney disease (ESKD). From a global perspective, roughly 2.3-7 million people worldwide died due to the lack of access to dialysis care (Niang, A., et. Al., 2018). In general, the most favorable renal therapy for ESKD patients would be transplantation. However, in these areas or countries where there is a lack of resources, transplantation may be limited due to an individual's lack of financial support or due to the global shortage of organs. As a result, dialysis (hemodialysis or peritoneal dialysis) is the most common renal replacement therapy for ESKD patients (Niang, A., et. Al., 2018).

According to *Table 2: Outcomes in adults and children with dialysis-requiring renal failure in sub-Saharan Africa*, 86% percent of adults in Africa diagnosed with acute kidney injury (AKI) experienced mortality without dialysis when needed, and 96% of adults diagnosed with ESKD experienced mortality without dialysis when needed (Niang, A., et. Al., 2018).

Barriers that hinder renal access include the lack of chronic kidney disease prevention, awareness, screening, lack of access to essential medications, late diagnosis, lack of funding, and lack of public health infrastructure. Other social determinants among these populations that may inhibit access include religious or cultural beliefs. The lack of public health infrastructure has a domino effect on the ability for an individual to survive kidney disease. When there is a delay in seeking resources, diagnosis, inadequate funds, and non-functioning dialysis facilities, an individual may be more susceptible to death from end-stage kidney disease, as opposed to ESKD patients that do not experience these barriers.

From the perspective of public health nursing, low-resource settings require improved public health infrastructure and public health policy in order to see a productive change when it

comes to the level of dialysis care accessibility. In areas around the world where determinants of health have an immense impact on the quality of care, the universal intervention must come from policy change. This approach is most effective because it is required to, "...develop and implement strategies to improve equity in access to and quality of dialysis in low-resource settings" (Niang, A., et. Al., 2018). This article adds to the research reviewed within the scope of public health nursing by discussing some of the differences between equality and equity. Equality emphasizes an atmosphere that is all the "same", whereas equity emphasizes an atmosphere that is "fair". The most famous example distinguishing equity and equality would be a set of three individuals being able to watch a baseball game over a fence. Equality would be manifested by all three individuals being given the opportunity to show up to the game. Equity would be manifested by all individuals being given the opportunity to actually see the game. If one person is shorter than the rest, we would need to provide a stool or a ladder so that the shorter individuals of the three would be able to actually see the game. Thus, equity is a matter of fairness and accounting for interventions that create a fair opportunity for those less advantageous than others.

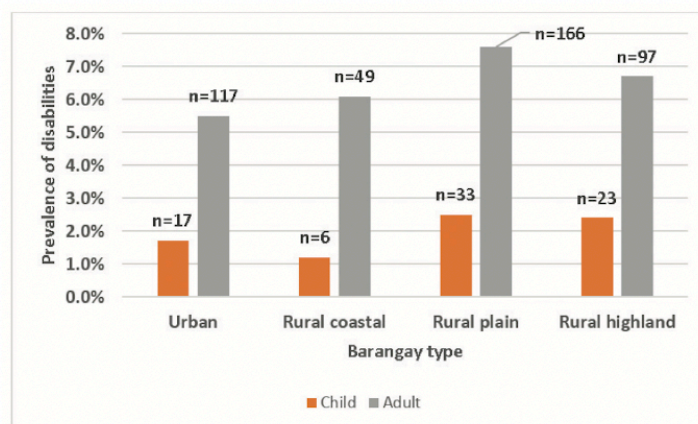
Understanding this concept of equity versus equality in the perspective of public health nursing is very vital in understanding the current healthcare system. This article emphasizes that healthcare or health services (specifically with regards to dialysis or other renal replacement therapies) is less available for individuals in low-resource settings. Thus, it is a problem of equity as opposed to equality. In order to implement equitable solutions, there needs to be change that is fostered from all systemic checkpoints, and integration between various sectors and government. Individuals who come from areas where lack of transportation and financial support, lack of employment, and lack of education exist are at a clear disadvantage to attaining optimal health.

Thus, these determinants serve as an unfair basis when it comes to receiving access to healthcare or healthcare services in low-resource settings or among rural populations.

Literature Review: Conclusion

The literature reviewed in the aspect of renal care in rural versus urban areas lacked focused information on the Philippines in its entirety. A major gap identified in the current research included the lack of data of ESKD patients in the Philippines and current data on the various renal therapies in use for individuals struggling with a form of renal disease. The articles lacked information on renal services itself, and instead provided a substantial amount of information on health care services and chronic diseases as a whole. The articles presented in the research did a thorough job with providing extensive reasoning behind healthcare access. An overall strength of the current research was the fact that a great amount of statistical methodology was performed to provide accurate data on various populations and areas of the world. An overall limitation in a majority of the studies was the presence of bias among participants – either introduced by the way the study was set up, or by the participant groups themselves. There is a significant relationship between low-resource areas/poor socio-economic factors and the ability to receive healthcare services. This confirms the overarching theory that healthcare is still such a prominent public health issue. Within the scope of nursing, public health policy and health determinants are important aspects of nursing care for patients. In order to be a nurse that practices the holistic nursing approach, one must be competent, educated, and well-informed on these cultural, environmental, and social factors that have an effect on one's quality of health.

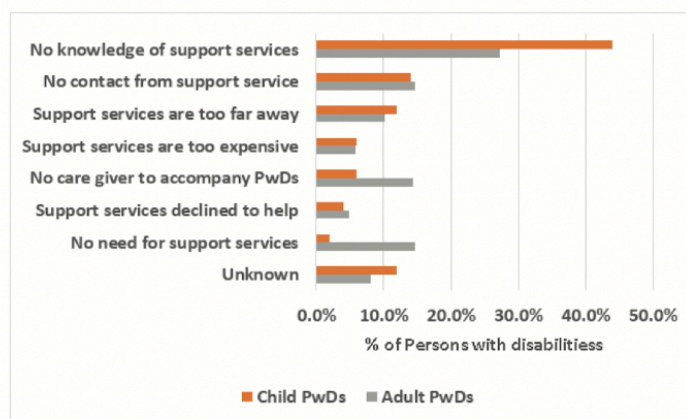
Figure 1: Prevalence of disabilities among children with disabilities (2-17 years old) and adults with disabilities (≥18 years old) by barangay type



Used with Permission.

Hodge, M., et Al. (2017). Cross-sectional survey to assess prevalence of disability and access to services in albay province, the Philippines. *Disability, CBR & Inclusive Development*, 29(3), 5-31.

Figure 6: Reported reasons why persons with disabilities do not receive care from a support service - children (2-17 years old) n=50; adults (≥18 years old) n=286



Used with Permission.

Hodge, M., et Al. (2017). Cross-sectional survey to assess prevalence of disability and access to services in albay province, the Philippines. *Disability, CBR & Inclusive Development*, 29(3), 5-31.

Table 2. Outcomes in adults and children with dialysis-requiring renal failure in sub-Saharan Africa^a

| | AKI | | ESKD | | |
|--|--------|----------|-----------------|------------------|----------|
| | Adults | Children | Incident adults | Prevalent adults | Children |
| Access to dialysis | 33% | 66% | 51% | NA | 61% |
| Mortality without dialysis when needed | 86% | 73% | 96% | NA | 95% |
| Mortality with dialysis | 30% | 30% | 88% | 16% | 36% |
| Stopped dialysis although needed | NR | NR | 84% | 5% | 49% |
| Left against medical advice or lost to follow up | 12% | 9% | 27% | 8% | 26% |

NA, not applicable; NR, not reported.

^aData reflect pooled outcomes from varying numbers of studies which reported the specific outcomes (see original articles for details [11[■],12[■]]).

Niang, A., et Al. (2018). Hemodialysis versus peritoneal dialysis in resource-limited settings. *Current opinion in Nephrology and Hypertension*, 27(6), 463-471.

Theoretical Framework

Nursing theorist Nola Pender is the renowned creator of one of the most popular nursing theories within the scope of nursing practice. In what she called the “Health Promotion Model”, Pender emphasized that the prevention of illness and disease starts with learning how to take care of ourselves and actively making personal healthy choices. Pender’s alma matter was Michigan State University and obtained a bachelor’s and master’s degree in 1964 and 1965. Pender proceeded to obtain a doctorate degree (Ph.D.) from Northwestern University in 1969. Currently, Pender is retired, but served a great deal of her life within a number of organizations. She has a history of being a professor in the Division of Health Promotion and Risk Reduction at the University of Michigan School of Nursing, as well as at Loyola University Chicago’s School of Nursing.

The Health Promotion Model (HPM) comprises of five key concepts: person, environment, nursing, health, and illness. This nursing theory supports the proposed examination of the social determinants effecting the health of individuals on both a rural and urban perspective. The holistic nursing approach involves paying attention to the relationship between a person and their environment. Health-enhancing behaviors arise when the social, physical, and cultural attributes of one’s environment is positive. This model serves as the basis for the fact that community environments have an immense role on one’s access to optimal health. In the context of Filipino geriatric patients with ESKD in the Philippines, the HPM endeavors to support the theory that when the environment of an individual is positive, adequate, and resourceful, then the risk for disease or illness exacerbation decreases.

Primary Research Aim and Ethical Considerations

In expanding the research regarding this topic, the primary research aim is to bridge the gap in delivery of renal care between rural and urban Filipino populations in the Philippines. Currently, the research literature is too broad and general that conclusions cannot be made specifically for ESKD geriatric patients in the Philippines. Ethical considerations regarding this proposed study involve obtaining informed consent from all participants and obtaining an IRB (International Review Board) approval. Because the proposal for future study involves older patients, vulnerability may be present because the illnesses present and need for renal care and dialysis are exposed in the study. If individuals in the study are unable to fully make decisions for themselves, a potential proxy may be needed to complete any surveys or questionnaires, and to also ensure informed consent is obtained. A potential limitation for the study is the bias present among Filipinos in their native country. Results may be biased if the researcher's country of origin is the Philippines as well.

Proposal for Further Study

After a thorough examination of the current research, a number of questions arise as a result of identified gaps in the literature. The literature did not specifically address care for renal patients in rural areas in the Philippines. Therefore, the questions that need to be answered are:

1. For geriatric patients in the Philippines with chronic kidney disease, do the social determinants of rural area living compared to the social determinants of urban area living affect access to renal care?
2. Based on the answers uncovered in the first question, how can nurses improve the public health infrastructure for ESKD in the rural areas of the Philippines?

The research literature addressed healthcare in the Philippines in general, but the specific need for renal care in the rural areas of the Philippines was not adequately addressed. There is insufficient data across multiple data bases that do not provide information specifically on patients diagnosed with end-stage kidney disease. The literature provides information regarding renal care from a global perspective. Therefore, the relevance of the following proposed study attempts to fill the gap that currently exists among ESKD geriatric patients in the Philippines. Furthermore, the proposed study attempts to address the population-specific social determinants that are prominent in rural and urban areas in the Philippines, as opposed to rural and urban areas around the world. In conducting future research, the proposed study will involve a cross-sectional, comparative, mixed-methods approach using qualitative and quantitative methods. In order to collect data to close the gap between Filipino renal patients, the study will involve assessing data from a statistical perspective, as well as from a descriptive and observational perspective.

Methodology

Both a survey and an in-person interview will be utilized. For the quantitative portion, comparative methods will be used to compare patients who live in rural areas with those who live in urban areas. The survey will assess the quantitative data (i.e. Age, gender, history and severity of renal disease, location, health history, etc.) and will include the following questions:

1. What is your age in years?
2. Do you have adequate transportation services?
3. What is your identified gender?
4. Do you have any history of chronic disease/illness other than ESKD?
5. At what age were you diagnosed with renal impairment?

6. What is your city in which you reside?
7. What is your current method of renal replacement therapy (RRT)?
8. Do you have adequate financial support?

To assess qualitative data – which will include the assessment of the socio-economic determinants of their environment and culture, which have the potential to directly affect their quality of health, an in-person interview will be conducted. This data will be exploratory for the qualitative portion. The questions to be included in this aspect include the following:

1. What do you need to ensure that you have adequate transportation services?
2. What is the distance from your primary place of residence to your primary clinic or primary health care provider?
3. What do you need to help you have adequate access to financial support?
4. What are cultural factors that interrupt your ability to achieve optimal health?
5. Please describe any personal habits you may have the increase your risk for obtaining renal disease.
6. Are you able to easily seek healthcare services or a healthcare provider for treatment?

Plan for Data Collection

The sample will represent the population of Filipino patients who specifically fall within the geriatric population and are diagnosed with ESKD who currently reside in rural areas of the Philippines. This population in comparison to urban populations seems to be understudied in the current research literature, and this population was not as equally represented compared to other populations around the world. The maximum proposed sample size would be 50 participants. Participants will be recruited by means of non-profit organizations in the Philippines with outreach programs that primarily focus on healthcare services for individuals who lack access to

health services and resources. The enrollment period will take place over the span of three months.

Data Analysis

Descriptive statistical methods will be utilized by numerical and graphic tools (i.e. mean, median, mode, histograms, graphs, etc.) to identify trends present among geriatric Filipino ESKD patients in rural Philippines. ANOVA (Analysis of Variance) tests will be used to analyze participants' survey results by age group to then draw conclusions about the participants in the sample. A similar analysis method will be used to analyze the content from the qualitative interview, in order to create a set of trends that exist across the sample. The data will be analyzed with content analysis. Similar phrases or words within transcripts of the various interviews will be grouped together to form categories and themes, to draw conclusions from what participants will say. These trends or characteristics presented will then serve as the basis for an improved renal care infrastructure to be put in place from a public health nursing perspective.

Conclusion

As many rural areas and healthcare systems around the world continue to undergo reform, the research literature presented in this thesis highlighted a lack of evidence or data for rural populations in the Philippines. The overall health among ESKD patients in rural communities is sharply defined by various social determinants. Cultural factors within Filipino culture also have a direct impact on the quality of health. The research also revealed that there are other authoritative factors that affect access to renal care throughout the Philippines. The research literature partially answered the research questions presented. The research proved that for urban area populations, access to healthcare services and optimal health is significantly better than populations in rural areas. However, the research provided this conclusion for rural and urban areas around the world and lacked focused data on the Philippines.

When it comes to clinical practice, public health nursing is thoroughly practiced. This thesis highlighted the fact that chronic illnesses (such as hypertension, diabetes, and obesity) increase the risk of chronic kidney disease among individuals. Recognizing this physiology in clinical practice is relevant to patient education for preventing chronic kidney disease and exacerbated disease processes. The proposed research in this study will provide a foundation for improved public health infrastructure in Philippine areas. There is still a great gap in the literature that needs to be addressed on behalf of end-stage kidney disease patients in Southeast Asian countries such as the Philippines.

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Appendix (Literature Review Table)

| Authors/Citation | Purpose/Objective of Study | Sample - Population of interest, sample size | Study Design | Study Methods | Major Finding(s) | Strengths | Limitations |
|--|---|---|---|---|---|---|---|
| Luyckx, V. A., Smyth, B., Harris, D. C. H., & Pecoits-Filho, R. (2020). Dialysis funding, ELIGIBILITY, procurement, and protocols in low- and Middle-income settings: Results from the International Society of Nephrology collection survey. <i>Kidney International Supplements</i> , 10(1). https://doi.org/10.1016/j.kisu.2019.1.005 | To survey nephrologists across low- and lower middle-income countries regarding their experience in the following public health infrastructures: <i>Dialysis funding and eligibility, dialysis-procurement mechanisms, clinical protocols for dialysis, monitoring of dialysis outcomes, and barriers to care for ESKD.</i> | 120 responses from 31 low- and middle-income countries, from 8 ISN regions. Stratified responses revealed that they came from 7 low-income countries, 12 lower middle-income countries, and 12 upper middle-income countries. | Mixed-Methods Research Design; Descriptive analysis of the survey responses | Mixed-methods research approach was applied, integrating quantitative (descriptive analysis of the countries' characteristics, proportion of answers in each domain) and qualitative results (identification of representative quotes for each domain). | Clinical protocols for dialysis were described as absent by 43.2% of the responses; 87.5% of the total responses reported partial or total funding for dialysis by the government; Limitations to access to dialysis were reported in more than half (17/31) of the countries responding to the survey. | Data emphasized the disparity across availability and access to dialysis treatment among low-resource areas; Data confirms GKHA findings that renal therapy is less prevalent in lower-middle-income countries; Results allowed for the ISN to improve public health infrastructure focusing on the provision of dialysis and ESKD care where resource limitations are prevalent. | Low response rate from low-resource settings; Lack of data in terms of pediatric ESKD care in low-research settings; Survey was voluntary which makes room for systematic bias among responses; The true representativeness of the data is unknown. |
| Hodge, M., Bolinas, A., Jaucian, E., Boneo, R., Schapira, A., & Villanueva, M. M. (2017). Cross-sectional Survey to Assess Prevalence of Disability and Access to Services in Albay Province, The | To assess the prevalence of disability and access to support services conducted in Albay Province in the Philippines in April 2016. | 70 Barangays (small villages) (the 3rd level administrative division in the Philippines); 30 households were selected randomly in each barangay to be surveyed. | Cross-Sectional Design | Cross-Sectional Survey: Population-based survey methodologies developed by the Washington Group of the UN Statistical Commission and UNICEF. | Disabilities were more prevalent in rural barangays (small villages in rural land); The higher rate of disability in rural areas resulted from poorer living conditions, less education, poverty, | Used a systematic and randomized approach in selecting the sample size; Accessibility deficiencies were identified in the data – specifically in rural highland and plain areas for children and | Bias exists in barangays with no current household list if the households were not selected by strictly applying the 'EPI method'; Persons with disabilities in the households may have |

| Authors/Citation | Purpose/Objective of Study | Sample - Population of interest, sample size | Study Design | Study Methods | Major Finding(s) | Strengths | Limitations |
|--|---|--|--|---|--|--|---|
| Philippines. <i>Disability, CBR & Inclusive Development</i> , 28(3), 5. https://doi.org/10.5463/dcid.v28i3.650 | | | | | fewer health care services and facilities; The most reported reason for why persons with disabilities do not receive care from a support service is No knowledge of support services; Overall, 63.2% (n=50) of persons with disabilities 2-17 years old were not receiving care from a support service; 66.7% (n=286) of persons with disabilities > 18 years old reported not receiving care. | rural highland and coastal areas for adults; Appropriate study design and method to gather data about a topic among various populations at a specific point in time; Data highlighted the connection between deficiency prevalence and lack of education and employment; many had not been educated in their basic rights. | been missed by the surveyors b/c of the sensitivity of disability questions; All persons with disabilities were not identified. |
| Cotingting, C. T., Apal, Z. H., Franco, M. B., Lozano, P. N., Quion, E. M., Tang, C. S., & Cabigon, J. J. (2018). Examining determinants of health service utilisation among Filipino older people: A cross-sectional study. <i>Australasian Journal on Ageing</i> , 38(1). https://doi.org/10.1111/ajag.12599 | To study factors affecting health service utilisation among older Filipinos (via Andersen's Behavioral Model) | 237 older people from Marikina City, Philippines; Minimal sample size needed was 233 in a highly urbanized city – located along the eastern border of Metro Manila; They suggested a minimum number of cases to include n=10k/p, | Cross-Sectional Study Design: Two-stage, cluster sampling design was used with barangays and individuals as first- and second-stage sampling units, respectively. - (Open-ended questions = | Questions for the survey instrument were patterned after the 2007 Philippine Study on Ageing (15) and the National Demographic and Health Survey 2013 (17) questionnaires; The instrument consisted of five sections (identifying | Response rate computed was 83% with a refusal rate of 5%; A majority of the respondents (65%) had monthly household incomes less than Php 40,000 (approximately 750 United States dollars (USD)) and reported having health insurance (79%); Most | Being a cross-sectional study design, many comparisons were able to be made regarding the hospitalization rates across various barangays/populations; Data for analysis resulted from the two-stage cluster sampling with the barangays; Study highlighted both | As this study was conducted in just one city, the results cannot be generalized to the entire country; Selection bias is a possibility with respondents drawn from a list based on older people registering for a senior citizen ID which |

| Authors/Citation | Purpose/Objective of Study | Sample - Population of interest, sample size | Study Design | Study Methods | Major Finding(s) | Strengths | Limitations |
|---|---|--|--|---|---|---|---|
| | | where k is the number of predictors in the model (k=9) and p is the smallest proportion of cases in the population (p=0.43). | <ul style="list-style-type: none"> qualitative approach - Yes/No questions = mixed-methods approach - Strictly no questions = just quantitative approach) | information, predisposing factors, enabling factors, need factors, and health utilisation in the past year); Only respondents who were aged 60 years and over at the time of the interview and had lived in Marikina City for at least 50% of the time in the past three years were included; Four barangays in Marikina City were randomly selected with probability proportional to size. | respondents (82%) had a chronic disease; 61% of respondents reported having been diagnosed with hypertension and 24% with diabetes; The mean age of respondents was 71 years; The majority of the respondents were female (65%), were currently not working (72%) and were married or had live-in partners (53%). | being of female sex and having a chronic disease were significantly associated with health service utilisation; used a statistical approach in selecting sample size. | equates to better health-seeking behaviours; About 29% of the respondents, mostly proxy respondents or respondents who had informal work, had difficulty providing an estimate for their monthly household income. |
| Niang, A., Iyengar, A., & Luyckx, V. A. (2018). Hemodialysis versus peritoneal dialysis in resource-limited settings. <i>Current Opinion in Nephrology and Hypertension</i> , 27(6), 463–471. https://doi.org/10.1097/mnh.0000000000000455 | To assess the use, access to and outcomes of hemodialysis and peritoneal dialysis in low-resource settings. | 138/189 World Bank Member countries are defined as low-income and middle-income; ESKD patients in low-resource settings. | Data Analysis | Data Analysis; Mixed-methods approach; Data is pulled from other studies to draw conclusions: Outcomes I adults and children with dialysis-requiring renal failure in sub-Saharan Africa; Illustration of individual and health system barriers which | Hemodialysis tends to predominate because of costs and logistics; however, services tend to be located in larger cities, often paid for out of pocket; Outcomes of dialysis-requiring acute kidney injury and end-stage kidney disease may be similar with | Results of the study helped in discovering what policy approach is required to improve equity in access to and quality of dialysis in low-resource settings; To foster integration between government, non-governmental organizations, private sector and the | Data analysis creates insufficient sample size for statistical measurement; Data is very general and does not have a specific answer to a question; Low quality of data; Ethical and privacy concerns; Lack of legitimate statistical |

| Authors/Citation | Purpose/Objective of Study | Sample - Population of interest, sample size | Study Design | Study Methods | Major Finding(s) | Strengths | Limitations |
|--|--|---|--|---|--|--|--|
| | | | | contribute to reduced access to dialysis and mortality in patients with dialysis-requiring kidney failure in low-resource settings; Health technology assessment (HTA) for renal dialysis for end-stage renal disease in Indonesia. | hemodialysis and peritoneal dialysis; Access to both hemodialysis and peritoneal dialysis remains highly inequitable in lower-resource settings; Findings are generalized for the population. | international nephrology community; Development of regional training programs and support for local research, to understand local needs and equitable solutions to improve access to kidney care (39). | evidence to draw conclusions. |
| Pobutsky, A., Cuaresma, C., Kishaba, G., Noble, C., Leung, E., Castillo, E., & Villafuerte, A. (2015). Social, Cultural and Behavioral Determinants of Health among Hawaii Filipinos. <i>Californian Journal of Health Promotion</i> , 13(1), 01–12. https://doi.org/10.32398/cjhp.v13i1.1809 | The project sought to gather Filipino community members' perspectives on why such chronic disease health disparities exist for Filipinos and identify solutions to address them. | Community leaders (n=20) and community-based focus groups (n=20 groups with 130 participants) | Multiple qualitative methods to gain the Filipino community's perspectives were used to gain a better understanding of what constitutes "healthy communities" for Filipinos in Hawaii. | The project gathered information from both immigrant and local Filipinos throughout the state, using community engagement methods of interviews with community leaders and community-based focus groups. | <ul style="list-style-type: none"> Diet, lack of exercise and sedentary behavior, stress, and financial disability were main reasons for chronic diseases among Filipinos. Filipinos themselves are able to articulate the determinant | In combining qualitative and quantitative data collection methods, conclusions about the health disparities and general quality of health among Filipinos were drawn; The questions created on the survey highlighted many socio-economic factors that have an impact on health disparities among Filipinos; Language barriers, ethnic stereotypes and discrimination, lack of | The community leader/key informants tended to be better educated than the overall Filipino population; The multiple methods used to recruit focus groups could have introduced bias in the form of having highly motivated participants. |

| Authors/Citation | Purpose/Objective of Study | Sample - Population of interest, sample size | Study Design | Study Methods | Major Finding(s) | Strengths | Limitations |
|--|---|--|------------------------------------|---|---|---|--|
| | | | | | s that affect their health. | education, traditional beliefs and fear. | |
| Liwanag, H. J., & Wyss, K. (2020). Who should decide for local health services? A mixed methods study of preferences for decision-making in the decentralized Philippine health system. <i>BMC Health Services Research</i> , 20(1). https://doi.org/10.1186/s12913-020-05174-w | To analyze decision-makers' perspectives on who should be making decisions for local health services and on their preferred structure of health service governance should they be able to change the situation; The Philippines decentralized government health services through devolution to local governments in 1992. | Researchers defined a "decision-maker" for this study as someone who is in a position, whether elected (i.e. political) or appointed/career (i.e. technical), who participates in performing six selected health service function; Northern Luzon (four provinces of Ilocos Norte, Ilocos Sur, La Union, and Pangasinan) together with the 116 municipalities and nine cities within these provinces, and has a combined population of five million; 27 Decision Makers were chosen. | Mixed-Methods Study; Data Analysis | Mixed-methods approach that included an online survey in one region and in-depth interviews with purposively-selected decision-makers in the Philippine health system; The Framework Method of qualitative health research (which involved the steps of transcription, familiarization with the interviews, coding, developing and applying an analytical framework, and charting and interpreting the data; Survey questionnaire then asked respondents for their preferred governance structure of the health system. | 24 online survey responses were received, and 27 interviews were conducted with other decision-makers; Survey respondents expressed a preference to shift decision-making away from the local politician in favor of the local health officer in five functions; Most survey participants also preferred re-centralization. | Analysis of survey results through visualization of data on charts was complemented by the themes that emerged from the qualitative analysis of in-depth interviews based on the Framework Method; Surveys were available through Google Forms which has a very easy interface; Well-defined operational definition for the decision makers of the study. | Response rate from the online survey was unsatisfactorily low indicating that we do not have the full picture of decision-makers' perspectives in the Philippines due to limited access to the internet in certain areas; lack of time for potential respondents to consult and respond to their emails given their heavy workload; Local politicians were under-represented despite this study having been endorsed by the DOH regional office. |